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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/531,494	03/20/2000	Daisaku Horie	009683-357	5477

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EXAMINER

COUSO, YON JUNG

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 01/30/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/531,494

Applicant(s)

HORIE, DAISAKU

Examiner

Yon Couso

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11 is/are allowed.
- 6) ☒ Claim(s) 1-8, 12-15 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

1. Applicant's arguments filed November 14, 2003 have been fully considered but they are not persuasive.

a. The applicant argues that the Cullen patent does not correct for skew by detecting edge data in an image, rotating the detected edge data, deriving a characteristic amount of the rotated edge data, and then determining a skew angle of the original image based on the derived characteristic amount. The applicant further argues that the Cullen reference teaches defining rectangles, that encompass features of the image, and then determines the skew, or offset, between associated rectangles. The examiner disagrees. As can be seen by the applicant's figure 6, the edge data in the claim is a bounding box outlining the areas of the images. In view of the specification, Cullen would read on the interpretation of edge data in an image, including an edge detection unit to detect an edge data included in an image data related to the received original image data (204 in figure 2c). The applicants are reminded that the examiner is entitled to give the broadest reasonable interpretation to the language of the claims. Therefore, the examiner is not limited to applicant's limited interpretation, which is not specifically set forth in the claims, In re Tanaka et al 193 USPQ, 139 (CCPA 1977).

b. The applicant argues that the Morimura patent does not teach a swing correction unit to correct distortion of an image caused by the swing of a camera with respect to the original image. The examiner disagrees. The claim does not clearly identify the difference between the swing of a camera and the skew of the camera. Depend on the angle of the swing, the skew of the camera and the swing of the camera

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would mean the same thing. Moreover, it does not require output of one unit (a swing correction unit) to be corrected again by the second unit (skew correction unit). Without these distinctions, claim 12 would still read on the Morimura. Morimura teaches an image processing device comprising: an image receiving unit to receive an original image data obtained with a camera picking up an original image (3 in figure 3); a swing correction unit to correct distortion of an image caused by a swing of a camera with respect to the original image (figure 16); and a skew correction unit to correct distortion of an image caused by a skew of the camera with respect to the original image (figure 11).

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 17, 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Cullen et al.

As per claim 1, Cullen teaches an image processing device comprising: an image receiving unit to receive an original image data (column 4, lines 28-29); an edge detection unit to detect an edge data included in an image data related to the received original image data (204 in figure 2c); a rotation unit to rotate the detected edge data (207 in figure 2c); an operation unit to derive a characteristic amount of the rotated edge data (603 in figure 6); and an inclination detection unit to detect an inclination angle of

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the received original image data based on the derived characteristic amount (604 in figure 6).

As per claim 2, Cullen teaches reduction unit to reduce the received original image data (202 in figure 2c); wherein the edge detection unit detects an edge data included in the reduced image data (204 in figure 2c).

As per claim 3, Cullen teaches an inclination correction unit to correct the inclination of the received original image data based on the detected inclination angle (206 and 207 in figure 2c).

As per claim 6, Cullen teaches the operation unit forms a histogram by projecting the detected edge data in a predetermined direction and the characteristic amount in a distribution of the formed histogram (figure 7).

As per claim 17, Cullen teaches an image processing method comprising the steps of: receiving an original image data (column 4, lines 28-29); detecting an edge data include in an image data to be processed related to the received original image data (204 in figure 2c); rotating the detected edge data (207 in figure 2c); deriving a characteristic amount of the rotated edge data (603 in figure 6); and correcting an inclination of the received original image data based on the derived characteristic amount (604 in figure 6).

As per claim 18, Cullen teaches the image data to be processed is the received original image data (201 in figure 2c).

As per claim 19, Cullen teaches reducing the received original image data (202 in figure 2c), wherein the image data to be processed in the reduced original image data (204 in figure 2c).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cullen et al in view of Mackinnon et al.

The arguments are advanced in paragraph 2 above as to the applicability of the reference are incorporated herein.

With regard to claim 4, Cullen does not teach details on the edge detection unit detecting the edge data by differentiating the image data with a filter. However, edge detection unit detecting the edge data by differentiating the image data with a filter is old and well-known as evidenced by Mackinnon, which discloses an edge detection unit detecting the edge data by differentiating the image data with a filter method (221 and 222 in figure 2). Incorporation of such an old and well-known technique as edge detection unit detecting the edge data by differentiating the image data with a filter into Cullen's would have been an obvious to one of ordinary skill in the art at the time the invention was made, for Cullen already teaches finding the boundary (edge) of the image and use of filter in finding an edge is old and well-known.

As per claim 5, Mckinnon teaches the edge detection unit uses different filters for finding an edge data in a horizontal direction and for finding an edge data in a vertical direction (221 and 222 in figure 2).

As per claim 7, Mckinnon teaches the predetermined direction includes a vertical direction and a horizontal direction of the original image data (figure 4).

As per claim 8, Mckinnon teaches a camera to pick up an image of an original, wherein the image data received by the image receiving unit is an image picked up by the camera (moving image in the disclosure is inherently picked up by a camera).

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Morimura.

As per claim 12, Morimura teaches an image processing device comprising: an image receiving unit to receive an original image data obtained with a camera picking up an original image (3 in figure 3); a swing correction unit to correct distortion of an image caused by a swing of a camera with respect to the original image (figure 16); and a skew correction unit to correct distortion of an image caused by a skew of the camera with respect to the original image (figure 11).

As per claim 13, Morimura teaches the skew correction unit corrects the distortion of the image corrected by the swing correction unit (figures 5, 6 and 11).

As per claim 14, Morimura teaches an inclination detection unit to detect an inclination of each of a plurality of portions in the received original image data wherein the swing correction unit and the skew correction unit correct distortion of the received original image data based on the detected inclination (figure 11).

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morimura.

The arguments are advanced in paragraph 4 above as to the applicability of the reference are incorporated herein.

Morimura does not teach details on an inclination reduction unit to detect an inclination of each of a plurality of portions of the reduced image data, wherein the swing correction unit and the skew correction unit correct a distortion of the received original image data based on the detected inclination. However, Morimura discloses an inclination detection unit to detect an inclination of each of a plurality of portions in the received original image data wherein the swing correction unit and the skew correction unit correct distortion of the received original image data based on the detected inclination (figure 11). The same technique applied in Morimura can be used in the reduced image as well as the original image data. Given the reference at the time the invention was made, it would have been obvious to one of ordinary skill in the art to use the same inclination detection on the skew correction technique on either original image data or reduced image data.

6. Claims 9-11 are allowed.
7. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nako, Suzuki et al and Chen et al are also cited.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

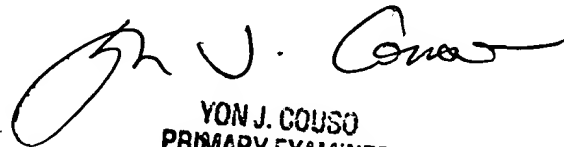
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yon Couso whose telephone number is (703) 305-4779. The examiner can normally be reached on 8:00 am –4:30 pm from Monday to Friday

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



YON J. COUSO
PRIMARY EXAMINER

Yjc

January 20, 2004